

**REMARKS**

Claims 1-32 and 51-62 are pending in this application, of which claims 4-6, 9-17, 21-24, 27 and 31-32 have been withdrawn. By this Amendment, claims 1-2, 9-11, 15, 18-20 and 51-52 are amended and claim 62 is added. No new matter is added.

**I. Allowable Claims**

Applicants appreciate the Office Action's indication that claims 52-61 are allowable. By this Amendment, claim 52 is amended to be independent, incorporating all features from base claims 1 and 51.

**II. Claim Rejections**

The Office Action (i) rejects claims 1-2, 7, 18-19, 25-26, 28-30 and 51 under 35 U.S.C. §103(a) over U.S. Patent No. 5,343,490 to McCall in view of U.S. Patent No. 6,330,265 to Kinoshita; (ii) rejects claim 3 under 35 U.S.C. §103(a) over McCall in view of Kinoshita, and further in view of U.S. Patent No. 6,638,773 to Whang et al. (Whang); (iii) rejects claim 8 under 35 U.S.C. §103(a) over McCall in view of Kinoshita, and further in view of U.S. Patent No. 5,559,824 to Baird et al. (Baird); and (iv) rejects claim 20 under 35 U.S.C. §103(a) over McCall in view of Kinoshita, and further in view of U.S. Patent No. 6,219,369 to Portnoi et al. (Portnoi). Applicants respectfully traverse the rejections.

McCall discloses several embodiments of a micro-resonator. Figure 8 of McCall shows one embodiment of the micro-resonator in which disk 80 has five non-symmetric grooves 84. McCall discloses that the grooves 84 outcouple clockwise circulating light and indicates that counter-clockwise circulating light may be outcoupled by use of mirror layers not shown (col. 11, lines 26-32). McCall is silent about any differing layers of disk 80.

McCall, in Fig. 7, discloses another embodiment directed to optimizing the contrast of the index of refraction between an active region 71 and spacer layers 72 in disk 70 (col. 7, lines 18-24; see also col. 6, line 46 to col. 7, line 17).

Regarding dependent claim 51, as argued in the May 11, 2006 personal interview and June 6, 2006 Amendment (with respect to a cladding layer), McCall fails to disclose that the embodiment of Fig. 8 has more than one layer. While McCall discloses the embodiments of Figs. 7 and 8, McCall never discloses that the differing features of either may be used with the other. The June 23, 2006 Final Rejection and November 21 Rejection fail to address these arguments. The rejection, which cites to elements of both embodiments to reject claim 51, fails to allege any motivation why one of ordinary skill in the art would have modified the embodiment of Fig. 8 to include the layers of Fig. 7. As the rejection fails to meet this requirement, the rejection is improper. Similarly, the Office Action cites to Kinoshita for disclosing both symmetric diffraction gratings 10 and a cladding layer 5, but only asserts that it would have been obvious to combine the disclosure of Kinoshita with that of McCall in order to outcouple light circulating in both directions (Office Action, page 2). However, this motivation only applies to the symmetric shape of the diffraction gratings 10. Thus, as motivation as to why one of ordinary skill would have looked to Kinoshita for disclosing a cladding layer (or the other claimed layers of the claims) is lacking in the Office Action's rejection, the combination of McCall and Kinoshita is improper with respect to anticipating various layers of the claimed microcavity disk resonator.

By this Amendment, claim 1 is amended to include the features of a quantum-well active layer and at least one other layer.

Because the Office Action fails to properly allege a *prima facie* rejection as discussed above (in relation to claim 51, features of which have been added to claim 1), the claims are patentable over the applied references. Thus, Applicants respectfully request withdrawal of the rejections.

**III. New Claim**

By this Amendment, claim 62 is added. Claim 62 includes the various layers of claim 52. Thus, claim 62 is patentable over the applied references.

**IV. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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